aid which power of this kind can give to regular university work in field geology that this communication is written.

The Cornell Summer School of Field Geology had for headquarters this season the classic region of Trenton Falls, N. Y., where collecting, section-making, map-making, etc., were carried on in great detail. At different times the two divisions of the class were taken by boat along the Erie Canal to Troy, and, by short railway trips to the Helderberg Mountains, the Cambrian east of Troy and to Oriskany Falls. The farthest north reached by boat was Plattsburg on Lake Champlain. During the summer the students had an opportunity to study the Archæan at several localities, also the Lower and Upper Cambrian, the Calciferous, Chazy, Birdseye, Black River, Trenton, Utica, Hudson River, Clinton, Onondaga, Water Lime, Lower Pentamerus, Delthyris shaly, Upper Pentamerus, Oriskany, Cauda-galli, Schoharie, Corniferous, Marcellus and Hamilton formations. Owing to boat accommodations, the class was limited to fifteen (four women and eleven men) though many more applications for admission to the class were made.

For the coming summer (1901) there will be room for forty-five. The Helderberg Mountains (Country man hill section) will be used as a rendezvous, where a camp will be formed similar to that of the past summer at Trenton Falls. This place has been selected because of the large number of formations (about a dozen) accessible within a radius of one mile. Excursions by boat down the Hudson to Rondout, up the Champlain to Valcour Island, westward on the Erie Canal to Syracuse, will be made without fail.

Many of the places visited could be reached by rail supplemented by hack drives, but I venture to say not so economically for the student. By camping and cooperation in the work, no one need spend over $65 for a ten-week term. This includes tuition, board and everything, and is the result of experience and not a mere estimate. Compare these figures with estimates of expenses as usually given in announcements for summer schools of field geology (usually for six weeks only) and observe the difference. Special attention is called to this fact, for it has often seemed to the writer that not enough consideration is usually given to the class of students who would profit most by opportunities for field work.

That the most advantageous place to study geology is in the field is too obvious to need any explanation here. The drawback in such work is the expense. In a recent English publication we read: "Would that some munificent person would found in the basin of the river Ribble a geological station where Cambridge students would have the means of acquiring a knowledge of field geology under conditions more favorable than those presented by the flats around the sluggish Cam."* The points of special note in our method of work, with the Helderbergs as a center of operation, are the following: (1) The mountains were long ago recognized by the illustrious Lyell and others as most ideal for geological study. (2) By camping and cooperating in camp duties we can make fair progress without the 'munificent person' so often appealed to. (3) By making long excursions by boat in various directions a far broader view of geology can be obtained than by remaining all the time at one station, however well it may be equipped, or however well located. (4) The more advanced student can keep his eyes open and ask the party to stop and stay at localities affording new materials so long as seems advisable.† There is no hurrying to catch trains and no fear of the oncoming of the night. Original work can accordingly be done to great advantage, serving not only to advance our knowledge of geological science, but also to demonstrate to the less advanced students the meaning of real geological work.

Gilbert D. Harris.

Cornell University,
December 8, 1900.

CURRENT NOTES ON METEOROLOGY.

de saussure's essays on hygrometry.

No. 115 of Ostwald's 'Klassiker der exacten Wissenschaften,' is a German translation of de Saussure's 'Essais sur l'hygrométrie,' which

* 'The Principles of Stratigraphic Geology,' by J. E. Marr, 1898, p. 98.

†See *Bull. Amer. Paleont.*, No. 13, November, 1900.

were originally published at Neufchâtel in 1783. This useful series of reprints also contains two other volumes of distinctly meteorological interest, viz., No. 57, 'Fahrenheit, Réaumur, Celsius, Abhandlungen über Thermometrie. 1724, 1730–1733, 1742,' and No. 58, 'Otto von Guericke's neue Magdeburgische Versuche über den leeren Raum., 1672.' The work of de Saussure in connection with hygrometry was of marked importance, and it is well to have interest in it revived by means of this attractive little volume, the price of which is but 2 m. 60 Pf. The book contains a brief biographical sketch of de Saussure, and also a number of notes on the text. The publisher is Engelmann, of Leipzig.

BRITISH RAINFALL FOR 1899.

THE fortieth volume of 'Symons's British Rainfall,' that for the year 1899, is the first one of the long series of these annual reports which has been compiled by anyone but Mr. Symons himself. Owing to the death of the founder of the British Rainfall service on March 10, 1900, the duty of compiling the annual report has devolved upon Mr. H. S. Wallis, who was associated with Mr. Symons for 30 years. 'British Rainfall' for 1899 appropriately contains an appreciative notice of Mr. Symons's life and work, together with an excellent portrait of that distinguished meteorologist. The number of observers from whom records are received is now about 3,500. Besides the usual full presentation of the results of the year's observations, the present volume contains a discussion of the average rainfall of the decade 1890–99, as determined by records at a hundred stations well distributed over England, Scotland and Ireland.

SCIENTIFIC BALLOON VOYAGES.

NOTICE has been received of a new work on balloon meteorology, issued by Friedr. Vieweg und Sohn, Braunschweig. The title of the work is 'Wissenschaftliche Luftfahrten, ausgeführt vom Deutschen Verein zur Förderung der Luftschiffahrt in Berlin.' The authors are Drs. Assmann and Berson, and associated with them are the following well-known meteorologists or aëronauts: Baschin, von Bezold, Börnstein, Gross, Kremser, Stade and Süring. There are three volumes. The first deals with the history of balloon ascents and with the instruments and their use; the second contains accounts of individual ascents, and the meteorological results obtained on them, and the third volume summarizes the whole subject, giving the most important results. The price of the work is 100 Marks.

R. DEC. WARD.

YELLOW FEVER AND MOSQUITOES.

MEDICAL authorities are by no means agreed as to the value of the experiments on the relations between yellow fever and mosquitoes carried out at Havana by Drs. Reed, Carroll, Agramonte and Lazear. The *British Medical Journal* remarks editorially: "At first glance these experiments appear to show almost conclusively that the germ of yellow fever is conveyed by a special species of mosquito — *Culex fasciatus*, presumably—and that the insect becomes infective only after from ten to thirteen days from the time of ingestion of the germ. Unfortunately the mode in which the experiments were conducted detracts much from their value. They are really by no means conclusive. The experimenters themselves are of this opinion. At most they are suggestive. It is to be regretted that, considering the great danger to which the subjects of these experiments were exposed, greater care was not exercised that the conditions of the experiments were absolutely free from objection. If life was to be risked, it was surely imperative that this risk should not be incurred in vain; that it should be unnecessary to go over the ground afresh, and thereby entail further risk.

Manifest objections to the conclusion that the mosquito did convey the disease in the three cases which yielded a positive result are, first, that nine out of the twelve individuals subjected to mosquito bite did not contract yellow fever; secondly, that those individuals who did contract the disease had entered the local endemic yellow fever area about the time they were bitten; they might have contracted the disease in the ordinary way, therefore, and not from the experimental mosquitoes; thirdly, that the germ of yellow fever has been recognized neither in the mosquito nor in human blood.